REMARKS

The present application includes claims 1-50. The Examiner has rejected claims 1-50. By this Amendment, claims 1, 18, 29, 38, 40, 42, 46, and 47 have been amended.

35 U.S.C. 112

Claims 40 and 42 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Regarding claim 40, the Examiner stated that there is insufficient antecedent basis for the limitation "data center's archive." Claim 40 has been amended to recite "an archive of said data center." Regarding claim 42, the Applicant has adopted the Examiner's proposed chain of dependency, and now claim 42 is dependent from claim 41 instead of claim 38.

35 U.S.C. 102(e)

Claims 1, 3-10, 12-18, 20-24, 26-30, 32-35, 37-39, and 41-50 have been rejected under 35 U.S.C. 102(e) as being anticipated by Wong (U.S. Patent No. 6,260,021).

Wong discloses a scheme for linking various legacy systems for medical data distribution. FIGs 1 and 2 of Wong illustrate, generally, the architecture of Wong's scheme. A picture archiving and communication system (PACS) 29 is connected through a first interface 32 to a medical image server 12. The first interface is described as being a CORBA Image Interface engine (CIIE) 32 at column 7, lines 38-40. Completely separate from the CIIE 32, a radiological information system (RIS) 18 is connected through a second interface 24 to the medical image server 12. The second interface is described as being a CORBA Report Interface Engine (CRIE) 24 at column 7, lines 62-65. The CIIE 32 and CRIE 24 are connected to a medical image server 12 that supports operation of middleware 50. The server 12 and middleware 50 are connected to at least one client workstation 38.

Data Center Storage

Wong's scheme divides componentry into three tiers, as discussed at column 7, lines 1-28. The first tier 14, 16, 42 is composed of legacy PACS and RIS systems 14, and

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other hospital and clinical information systems 16, 42. The third tier is composed of clients 38. The second tier is the medical information server 12, "which provides for uniform and rapid distribution of information between first-tier systems and the third-tier client systems, such as workstations 38." In other words, the second-tier (also called "middle-tier") is merely a conduit between clients and PACS and RIS systems.

Wong does not teach or suggest a data center for storing for later retrieval medical information and images. Indeed, the Examiner notes at paragraph 7 of the Office Action a lack of an explicit teaching or suggestion for storing medical information with a medical image in a data center. Specifically, the Examiner states, "[I]t is noted that formatted medical image and associated information that is displayed on the client systems must at least be temporarily stored in memory." As an initial matter regarding the above-quoted statement, the Applicant is not sure whether this statement is asserting official notice rejection or an inherency rejection. In a separate section below, the Applicant respectfully traverses the Examiner's assertion of official notice and/or inherency that medical image and associated information must at least be temporarily stored in memory of Wong's server. Notwithstanding the Applicant's traverse, the Applicant agrees with the Examiner that storage of medical images and associated information on Wong's server 12, if it occurs at all, would be temporary. For Wong's server 12 to act as a conduit between first-tier components and third-tier components, some data could conceivably pass through the server 12, and thus be temporarily stored by the server 12.

By contrast, each of claims 1-46 includes a limitation that the data center is capable of storing for later retrieval medical information and images. Specifically, each of independent claims 1, 18, 29, and 38 recite a data center capable of storing for later retrieval medical information and medical images. The Applicant respectfully submits that storage for later retrieval is not the same as temporary storage. Consequently, the Applicant respectfully submits that each of independent claims 1, 18, 29, and 38, and the corresponding dependent claims 2-17, 19-28, 30-37, and 39-46 are in a condition for allowance for at least these reasons.

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Association of Data Types

Wong's scheme is generally directed towards providing uniform access to "medical images and associated records in electronic form," as described at column 1, lines 5-10. As further described between column 2, line 65 and column 3, line 3, medical images are stored in PACS, and associated medical interpretive information is stored on RIS and other legacy systems. Wong discloses a scheme for providing uniform access to separate types of data – namely medical images stored on PACS and associated medical interpretive information stored on RIS.

First-tier components are described by Wong at column 7, lines 38-57. The CIIE 32 receives image data from a PACS 29, which is formatted according to the DICOM standard. The CIIE 32 reformats the image data from a DICOM format into a format accessible by the CORBA/IIOP protocol. As further described beginning at column 7, line 59, the CRIE 24 performs a similar function as the CIIE 32. The CRIE 24 receives report data from a RIS 18 that are formatted according to HL7. The CRIE 24 reformats the report data from HL7 into a format accessible by the CORBA/IIOP protocol. Thus, both the CRIE 24 and the CIIE 32 provide the same type of formatted output – i.e. compliant with the CORBA/IIOP protocol. The Wong specification further clarifies this at column 11, lines 18-20, as it states that the CRIE 24 and the CIIE 32 (collectively, the "interface engines") create defined formatted data that is "uniformly defined regardless of the types of interfaced PAC and RIS system."

The functioning of second-tier components and systems are described in FIGs. 2 and 3, and corresponding text. As discussed starting at column 12, line 65, a middleware database 62 is provided to provide persistent objects necessary for the functioning of the image server middleware. As further described at column 13, lines 45-58, the database contains an object infrastructure segment 102 for each object. The segment 102 consists of an object definition data component 104 and a location data component 106. Explained further at column 11, lines 4-28, the middleware database 62 object definitions are utilized to retrieve information stored on PACS and RIS systems.

Wong does not teach or suggest associating medical information in a medical image format-compatible format with a medical image. Instead, Wong discusses, for example in the background at column 3, lines 1-3, that information stored on an RIS system is "associated." In the sense of Wong, interpretive information, such as medical reports, may be described as "associated" with medical images because the interpretive information may be derived from "associated" medical images. For example, a radiologist may create "associated" interpretive information, such as a report, after reviewing medical images. Interpretive information is a form of meta-information (information about information), and thus will always bear some relationship with the underlying information. Therefore, in the sense of Wong, interpretive information, such as medical reports, will almost invariably be "associated" with the underlying information. By contrast, nowhere in Wong is it taught or suggested that medical information may be actively associated with medical images.

Although Wong considers information stored on an RIS that is in some sense associated with medical images, Wong does not teach or suggest actively associating medical information with a medical image. Nowhere in Wong is it taught or suggested that separate data types may be associated with each other. Instead, Wong discloses only a way of uniformly accessing separate data types from separate legacy systems.

By contrast, each of claims 1-28 and 38-50 includes a limitation that medical information is associated with medical images. Because Wong does not teach or suggest actively associating medical information with a medical image, the Applicant respectfully submits that each of independent claims 1, 18, 38, and 47, and the corresponding dependent claims 2-17, 19-28, 39-46, and 48-50 are in a condition for allowance for at least these reasons.

Similarly, Wong does not teach or suggest storing associated medical information with a medical image. As discussed, Wong neither teaches nor suggests storage in a data center or associating medical information with a medical image. Consequently, Wong does not teach the storing of associated medical information and a medical image. By contrast, each of claims 1, 18, 38, and 47 recite that a associated medical information and a medical image are storable on a data center. Therefore, the Applicant respectfully

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submits that each of independent claims 1, 18, 38, and 47, and the corresponding dependent claims 2-17, 19-28, 39-46, and 48-50 are in a condition for allowance for at least these reasons.

Transmitting or Providing Substantially Together Medical Information and a Medical Image

Additionally, Wong does not teach or suggest transmitting or providing substantially together medical information and a medical image. Instead, Wong's scheme is set up to retrieve data types from either a PACS or a RIS. As discussed between column 14, lines 43-48, Wong's scheme can retrieve either report data through a CRIE or image data through a CIIE. Nowhere in Wong does it teach or suggest that an interface may provide substantially together medical information and a medical image. By contrast, each of claims 1, 18, 38, and 47 recite transmitting or providing substantially together medical information and a medical image. Therefore, the Applicant respectfully submits that each of independent claims 1, 18, 29, and 47, and the corresponding dependent claims 2-17, 19-28, 29-37, and 48-50 are in a condition for allowance for at least these reasons.

For at least these reasons, the Applicant respectfully submits that claims 1-50 are allowable over Wong, and the Examiner's rejection should be withdrawn.

102(e) Rejection Based on Official Notice and/or Inherency

The Examiner states, "[I]t is noted that formatted medical image and associated information that is displayed on the client systems must at least be temporarily stored in memory." The above-quoted statement could be interpreted as the Examiner asserting Official Notice of the subject of the statement or as the Examiner asserting that the claim limitations for "storing medical information in a medical image format-compatible format with a medical image" is inherent.

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Official Notice

If the Examiner is asserting Official Notice that the subject of the statement is common knowledge, the Applicant respectfully traverses the Examiner's assertions as further set forth below. Alternatively, if the Examiner's assertions are based on the personal knowledge of the Examiner, then under MPEP § 2144.03(C) and 37 C.F.R. § 1.104(d)(2), the Examiner's assertions must be supported by an affidavit from the Examiner. According to MPEP § 2144.03(A), Official Notice, without supporting references, should only be asserted when the subjects asserted to be common knowledge are "capable of instant and unquestionable demonstration as being well-known." That is, the subjects asserted must be of "notorious character" under MPEP § 2144.03(A).

However, the Applicant respectfully submits that the subject matter of the Examiner's assertion of Official Notice is not well-known in the art as evidenced by the searched and cited prior art. The Applicant respectfully submits that the Examiner has performed "a thorough search of the prior art," as part of the Examiner's obligation in examining the present application under MPEP § 904.02. Additionally, the Applicant respectfully submits that the Examiner's searched and cited references found during the Examiner's thorough and detailed search of the prior art are indicative of the knowledge commonly held in the art. However, in the Examiner's thorough and detailed search of the relevant prior art, none of the prior art taught or suggested the subject matter of the Examiner's assertion of Official Notice. That is, the Examiner's thorough and detailed search of the prior art has failed to yield any mention of the teachings that the Examiner is asserting as widely known in the art. The Applicant respectfully submits that if the subject matter of the Examiner's assertion of Official Notice had been of "notorious character" and "capable of instant and unquestionable demonstration as being well-known" under MPEP § 2144.03(A), then the subject matter would have appeared to the Examiner during the Examiner's thorough and detailed search of the prior art.

If the Examiner had found any teaching of relevant subject matter, the Examiner would have been obligated to list the references teaching the relevant subject matter and make a rejection. Consequently, the Applicant respectfully submits that the prior art does

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not teach the subject matter of the Examiner's assertion of Official Notice and respectfully traverses the Examiner's assertion of Official Notice.

The Applicant specifically challenges the Examiner's assertion of Official Notice with regard to the following: "[I]t is noted that formatted medical image and associated information that is displayed on the client systems must at least be temporarily stored in memory." As stated above, the Applicant respectfully traverses the Examiner's assertions of Official Notice and submits that the subject matter is not of such "notorious character" that it is "capable of instant and unquestionable demonstration as being well-known." Under MPEP 2144.03, the Examiner is now obligated to provide a reference(s) in support of the assertion of Official Notice if the Examiner intends to maintain any rejection based on the assertion of Official Notice. Additionally, the Applicant respectfully requests the Examiner reconsider the assertion of Official Notice and provide to Applicant any basis for the Examiner's assertion of Official Notice. If the Examiner has any questions, the Examiner is invited and encouraged to contact the Applicant at the number below for further discussion.

Thus, the Applicant respectfully submits that, as amended, claims 1, 18, 29, and 38 are allowable as amended. Claims 2-17, 19-28, 30-37, and 39-46 ultimately depend on claims 1, 14, 22, 33, and 43 and are patentable over Wong for at least the reasons given above.

Inherency

If the Examiner is asserting that the subject of the statement is inherent to Wong, the Applicant respectfully traverses the Examiner's assertions as further set forth below. According to MPEP § 2112, an examiner must provide rationale or evidence tending to show inherency. The fact that a certain result may occur or be present in the prior art is not sufficient to establish inherency of that result. *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993). "To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may

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result from a given set of circumstances is not sufficient." *In re Robertson*, 169 F.3d 743 (Fed. Cir. 1999). "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

The Examiner has not provided why it necessarily flows from Wong that a data center necessarily stores medical information in a medical information-compatible format with a medical image. While some data may or may not temporarily pass through Wong's server en route to a third-tier component, it does not necessarily flow that Wong's server stores medical information with a medical image, even temporarily.

Thus, the Applicant respectfully submits that, as amended, claims 1, 18, 29, and 38 are allowable as amended. Claims 2-17, 19-28, 30-37, and 39-46 ultimately depend on claims 1, 14, 22, 33, and 43 and are patentable over Wong for at least the reasons given above.

35 U.S.C. 103

Claims 2, 19, 31, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong in view of Rothschild (U.S. Patent No. 6,678,703).

Rothschild discloses a central data management system. However, neither Rothschild by itself, nor in combination with Wong teaches or suggests all of the claim limitations recited in each of independent claims 1, 18, 29, and 38. Specifically, Rothschild does not teach or suggest associating of medical information with medical images. Additionally, Rothschild does not teach or suggest storing for later retrieval the associated medical information and medical images. Moreover, Rothschild does not teach or suggest transmitting substantially together the associated medical information and medical images. Instead, Rothschild discusses, from column 20, line 48 to column 22, line 42, a central data management system that allows for faster access to newer, more frequently accessed data. Newer data is stored on faster media, while older data is stored on slower, cheaper media. In addition, the data management system expedites data delivery by "pushing" newer data out as soon as it becomes available. By contrast,

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independent claims 1, 18, and 38 include a limitation that medical information in a medical image format-compatible format is associated with a medical image. Additionally, each of independent claims 1, 18 and 29 recite an interface unit transmitting the medical information and the medical image substantially together. For at least these reasons, the Applicant respectfully submits that claims 2, 19, 31, and 40, which depend from claims 1, 18, 29, and 38 respectively, as well as the rest of the claims of the present application, should be allowable over Wong in view of Rothschild.

Claims 11, 25, and 36 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Wong in view of Anderson (U.S. Patent No. 6,078,925). Anderson shows a way to provide relational extenders for databases. Anderson does not teach or suggest, either by itself or in combination with Wong, all of the claim limitations recited in each of independent claims 1, 18, and 29. Specifically, Anderson does not teach or suggest associating of medical information with medical images. Anderson does not teach or suggest storing for later retrieval the associated medical information and medical images. Moreover, Anderson does not teach or suggest an interface unit transmitting substantially together the associated medical information and medical images. Instead, Anderson merely shows a scheme for relational extenders for a computer-based relational database. Stated at column 2, lines 51-65, the motivation behind Anderson's scheme is to bring complex data types under the umbrella of a data base system for all purposes of application access, security, and administration. This is very similar to Wong's goal of providing uniform access to different data types. By contrast, independent claims 1, and 18 include a limitation that medical information in a medical image format-compatible format is associated with a medical image. Additionally, each of independent claims 1, 18 and 29 recite an interface unit transmitting the medical information and the medical image substantially together. Respectfully, the Applicant submits that claims 11, 25, and 36, which depend from claims 1, 18, and 29 respectively, as well as the other claims of the present application, should be allowable over Wong in view of Anderson.

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CONCLUSION

The Applicant submits that the claims define allowable subject matter and are in condition for allowance.

If the Examiner has any questions or the Applicant can be of any assistance, the Examiner is invited and encouraged to contact the Applicant at the number below.

The Commissioner is authorized to charge any necessary fees or credit any overpayment to the USPTO Deposit Account GTC, Account No. 070845.

Respectfully submitted,

Christopher N. George
Registration No. 51,728
Attorney for Applicant

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McAndrews, Held & Malloy, Ltd.
500 West Madison Street, 34th Floor
Chicago, Illinois 60661
Telephone: (312) 775-8000
Facsimile: (312) 775-8100

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